

About Joints

There are many ways of fastening pieces of wood together, some are purely functional such as butt joints, while others such as dovetails are functional as well as decorative. To add additional strength or appeal two or more types of joints are often combined such as splined miter joints when making picture frames.

Biscuit Joints

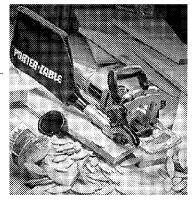
Biscuits are small oval shapped disks made from composite wood material that expands when moistened with glue. They are often used to to keep boards aligned when gluing up for panels.



Porter-Cable Deluxe Biscuit Joiner, Model No. 557

7.5 amp motor delivers plenty of bite. Includes 2" and 4" diameter blades for standard and face frame biscuits.

Porter-Cable Deluxe Biscuit Joiner, Model No. 557



Types of Joints

Biscuit Joints

Box Joints

Dado Joint

Domino Joints

Dovetail

Dowel Butt Joint

Finger Joints

Lap Joint

Locked Drawer Joint

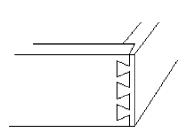
Miter Joint

Mortise and Tenon Joint

Dovetail

Pocket Hole
Spline Joint

Blind dovetails are often used in drawer construction because of the strength the locking design provides. They can be cut by hand or with a router and a special jig.





Dovetail Jig

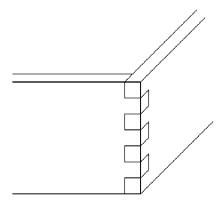
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Dovetails and How to Hand-Cut Them

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Box Joints

Box joints are square interlocking fingers to join two pieces at a right angle, they are cut on a table saw with a dado blade or with a router and a straight bit. Either method requires a jig to space the fingers evenly. If a router is used it is mounted under a table.



Make A Box Joint Jig

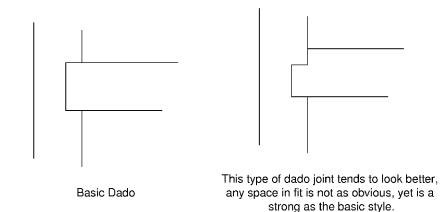


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Dado Joint

Dado's are typically used in making book shelves, they support the shelf without the benefit of any additional fastners, any glue or hardware simply holds the shelf in place. Dados may be made with a dado blade on a <u>table</u> or <u>radial arm</u> saw, or with a straight bit in a <u>router</u>.







Freud 6" Professional Dado Set

Create neat flat bottom grooves and virtually splinter free cuts! Use on all table saws, and radial arm saws for cutting slots, grooves, dadoes, and rabbets in softwood, or hardwood.Freud Carbide-Tip..

Freud 6" Professional Dado Set

Domino Joints

This loose tenon system from <u>Festooi</u> is similar to biscuit joinery in that a plunge tool is used to cut a slot for an insert, the inserts used are rectangular shaped like the tiles in a set of dominos.

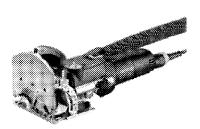


DF 500 Q Domino® Joiner
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Shop Now

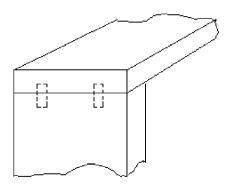
This revolutionary new tool cuts quick, precise mortises with the ease and simplicity of a biscuit cutter! One plunge creates a perfect, smoothsided mortise that is precisely sized to accept a DOMINO loose tenon, creating an incredibly strong joint in stock as narrow as 7/8" wide! A universal joinery system with endless applications, the DOMINO is far stronger and more versatile than biscuits or dowels, and requires no cumbersome jigs and fixtures. Features precise Festool engineering from tip to tail. Four cutter sizes machine snug mortises for five different DOMINO sizes. Self-referencing pins allow you to cut rows of perfectly spaced mortises with no need to measure and mark. Mortise width is adjustable in three increments with the simple turn of a knob, and cuts can be overlapped for long mortises. Fence tilts from 0-90°, with stop positions at 0°, 22.5°, 45°, 67.5°, 90°, and smooth, precise machining throughout makes for an incredibly quiet machine. Joiner Set includes DOMINO® Joiner, D5 Cutter, Trim stop, Cross stop, Support bracket, Wrench and Plug-it power cord, all contained in the Systainer 2 storage case. Systainer Assortment includes 1105 DOMINO tenons and all four cutters in a Systainer 2 case.



DF 500 Q Domino® Joiner

Dowel Butt Joint

Making a dowel butt joint requires nothing more than a drill and a drill bit if the positions are carefully measured, however there are tools and jigs which make the job a lot easier. A jig can be purchased or <u>made</u> to align the holes, using a drill press will make straight holes and it has a depth gauge.





Dow el Pro JigDelivers the precision demanded by professional woodworkers...

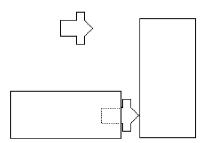
Dowel Pro Jig

The Dowel Joint and How to Make Them

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Using dowel centers

Dowel centers are used to mark the position to drill holes for dowels, they are small buttons with a shank that goes into the drilled hole in one piece and the point is then pressed against the other piece. If two or more dowels are required, drill all the holes and put a dowel center in each hole.



They come in different sizes, it is a good idea to buy several sets at the same time because the length of the http://www.sawdustmaking.com/About%20Joints/about_joints.htm (6 of 13)10/24/2009 1:19:04 PM

points vary from brand to brand and can not be used together.

Dowel Centers

Buy them in individual sizes or as a set.



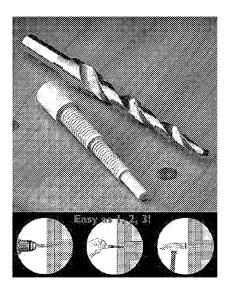
Dowel Centers

Making Dowels

If you cut your own dowels notch the ends with a pair of pliers to make glue channels.

Miller Dowel System

This is a new system using stepped dowels and a special bit.



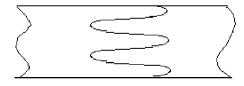
More info

Finger Joints

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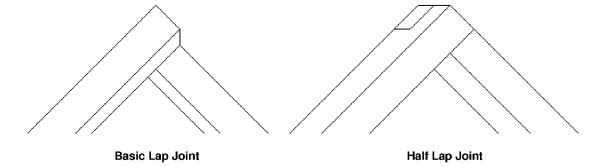
About Joints

Finger joints are long tapered fingers that interlock to join two pieces lengthwise as in commercial moulding or side by side in panels. They are cut with high powered routers or shapers.



Lap Joint

Lap joints are made by laying one piece on top of another, they can be used in angle or lengthwise joints. Half lap joints are when half of the thickness from each piece is removed, they can be made by hand with a saw and chisel, on a table saw or radial arm saw with a dado blade, or with a router and a straight bit.



To make half lap joint

Half lap joints must be cut exactly centered so the surfaces line up. Set your saw blade or router bit height to cut just under half way through a test piece of material exactly the same thickness of the wood being used, preferabally a cut-off of it. Cut through one side of the board at the very end, turn the board over and make a second cut, you should now have a sliver of wood on the end of the board.



Raise the blade or bit a little at a time to leave a paper thin sliver and cut the half lap.

If you are using a saw blade make several cuts across the lap, remove excess with chisel.

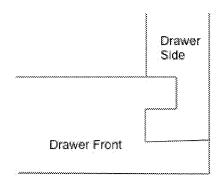


About Half Lap Joints and How to Make Them by Hand

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Locked Rabbet Drawer Joint

Locked rabbet drawer joints fasten the front of a drawer securely to the sides. They may be made on a table saw with a dado blade or with a router mounted in a table with the bit shown below.



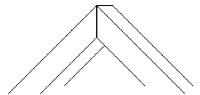


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Miter Joint

Miter joints are made by cutting the ends of the pieces on an angle egual to one half of the angle of the finished product, a square 90° corner is made by cutting each piece at a 45° angle.



The angles are cut in a miter box by hand, with a <u>power miter saw</u>, or on a table or radial arm saw. A compound miter is when the angles are cut at an angle both to the face and edge of the piece as in crown moulding installation.

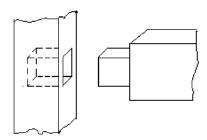
Special clamps are used for miter joints, <u>see picture frame clamp</u>, they can be fastened with glue only, glue and nails or screws, or with a <u>biscuit</u> or <u>spline</u>.

The Mitred Joint and how to make them by hand

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Mortise and Tenon

Mortise and tenon joints consist of putting a square peg in a square hole, they hold extremely well and were used in most antique furniture building.



The Mortise and Tenon Joint and How to Cut Them By Hand

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Mortises can be cut with a dedicated machine, a drill press attachment or be done by hand by drilling holes and squaring the corners with a chisel.

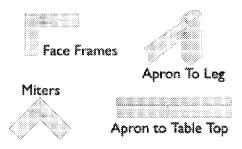
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Tenons are usually cut on a table saw with a jig, they can also be cut by hand.

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Pocket Hole

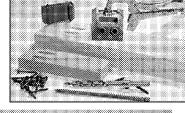


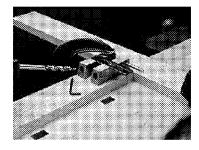
This is a type of butt joint where screws are driven in on an angle to join the material, a special jig is used for this.

The Rocket Jig by Kreg

Quick and easy professional quality pocket holes.

The Rocket Jig by Kreg

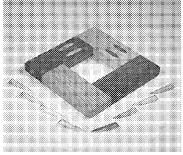




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A simple jig for drilling the holes.

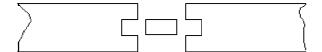
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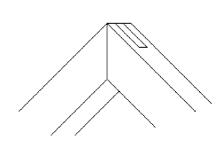
Plugs to finish the job.

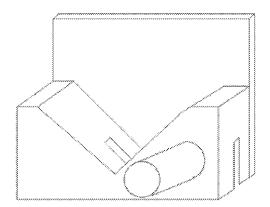
Spline Joint



This is a thin strip glued into grooves cut into the pieces being joined, these are used to fasten panels together and to fasten the mitered corners of picture frames. They are made with a table saw and dado blade or with a router and straight bit.

Picture Frame Spline Jig





Splines add strength to a miter joint, a simple jig can be made for use on a table saw or router table. Make the back high enough that the picture frame can be clamped to it above your fence. The short dowel is used as a handle to keep the jig tight to the fence. Set the fence to center the slot for the spline, make the cut, insert the spline, trim and sand even with frame when glue has set.





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